

**SAS Superstructure**

Location: 04-SF-80-13.2 / 13.9

Client Name: CalTrans

Run date 22-Nov-14

Time 7:02 AM

Daily Diary Report by Bid Item

Contract No.: 04-0120F4

Diary #: 1094 Const Calendar Day: 667 Date: 02-Apr-2014 Wednesday

Inspector Name: Brignano, Bob Title: Transportation Engineer

Inspection Type:

Shift Hours: Break: Over Time:

Federal ID:

Location:

Reviewer: Schmitt, Alex Approved Date: Status: Submit

**04-0120F4
04-SF-80-13.2/13.9
Self-Anchored
Suspension Bridge****Weather**

Temperature 7 AM

12 PM

4PM

Precipitation

Condition partly cloudy am, clear pm

Working Day ☒ If no, explain:**Diary:**

Dispute

General Comments

CCO 314, SAMPLING AND TESTING A354 GRADE BD MATERIAL:

ABF Engineer Kelvin Chen is working part time in the field and office on CCO 314.

On site today from VGO are Rob Rutledge and Dave Van Dyke. They arrive on site at 0800, take lunch between 1200 and 1230, and leave the site about 1630.

VGO continues works today on the program to collect the data, add the calculated channels, and produce plots for the two times a day reports for TR's 12 & 13. There is also work to debug the system for automatic email notifications in the event of a rod break. Between about 0900 and 0930, the displacement transducer system is added to TR 12. Between about 1030 and 1100, VGO attaches the clamps to the test rod stickout ends where the wire for the reference electrode check runs. VGO participates in the TR 13 jack and strain gauge exercising and zero procedures between 1420 and 1500. VGO performs pH checks between 1500 and 1600 for the DJV – this is a preview of the VGO submittal currently under review detailing the changes to the pH testing protocols.

Crews at the Pier 7 warehouse area are working an 8-hour shift 0700 through 1530 today. Ironworker Jared Garret works all 8 hours at the CCO 314 test rig site, operator John Sabatino works at various times in the morning and afternoon adding up to about 3 or 4 hours at the CCO 314 test rig site with the remainder of the day working elsewhere and not covered by this diary, laborer Carlos (Pedro) Garcia works all 8 hours at the CCO 314 test rig site, and ironworker Ricky Damboise works briefly in the morning and afternoon assisting with the hydraulics for the jacks for an hour or two at the CCO 314 test rig site.

As a result of rain showers that continued yesterday after the completion of pumping in the morning to remove the previous lake in the test rig area, because of the intentionally plugged DI per the approved SWPPP, water collected again in the test rig area. The sampling, testing, and approval from two days ago applied to yesterday's rain as part of the same weather event and to the water to be pumped today - ABF can begin pumping the water first thing this morning. After the laborer sets up the pumps in the low spot of the lake to pump the water to the next DI, pumping starts about 0720. Because the lake has some oil on the surface as a consequence of the recent work in the area, while the water is being pumped from the low spot, the oil sheen on the surface is collected with a shop vac and placed in 55-gallon drums for later disposal. Pumping is complete about 0900. The work to put away the pumps and hoses and to continue addressing oil on the ground in the test rig area, including use of a shop vac and absorbent pads, happens later in the morning after some other operations are completed first.

The ironworker works on the TR 12 bellows/flashing between about 0700 and 0730. Yesterday, the



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bellows/flashing flange was bolted to test rig diaphragm plate that has drill and tap holes along with the reinforcing washer plate. Today, the joint between the washer plate and the diaphragm, with the bellows/flashing flange in between, is caulked (Loctite 598 High Performance RTV Silicone Gasket Maker, product approved by the DJV for use in the wet chamber) all around. The bellows/flashing position is adjusted by pushing the part tight around the rod to the south to allow room for rod elongation. The Adeka KM Sting and caulk patch of the hole in the bellows/flashing has more caulk (Loctite 598 High Performance RTV Silicone Gasket Maker, product approved by the DJV for use in the wet chamber) applied around the joint between the bellows/flashing surface and the Adeka KM Sting. The bellows has the stainless steel hose clamp added to where it is parallel to the rod and the interface between the rod and bellows is caulked (Loctite 598 High Performance RTV Silicone Gasket Maker, product approved by the DJV for use in the wet chamber).

The sandbags and traffic plates at the south ends of TR's 12 & 13 are adjusted and finalized this morning. Sandbags were previously here from TR's 10 & 11, but some were removed and some were damaged during the work to convert TR's 10 & 11 to TR's 12 & 13. A few more sandbags are added and the positioning/stacking of some sandbags is adjusted. The traffic plates were previously in the area but shifted a few feet to the south so they were not in the way of the work – they are shifted back to the north to align with the south end of the test rigs. This work on south end of TR's 12 & 13 starts about 0730, the south TR 13 traffic plate is final positioned by about 0805, and the south TR 12 traffic plate is final positioned by about 0815. Then, for the purpose of supporting the tents over TR's 12 & 13, which will run long to the west to encompass the two 300 gallon poly tanks, traffic plates are added to the adjacent TR 9 (just an old test rig, not under load in this Phase of the Townsend Testing). Those plates are supported, set, and adjusted with work done about 0945.

After the laborer is complete with the pumping of the lake from recent rains to the next DI per the approved SWPPP at about 0900, he begins work to clean out the two 300 gallon poly tanks that will be the reservoirs for the TR's 12 & 13 wet chambers. These tanks were cleaned out months ago, and this is another cleaning and final check. Water is put in the tank and vacuumed out to ensure that any debris is removed from the tanks. Then the two tanks are then set on the previously built SWPPP containment that is elevated above the test rigs and located to the west of TR 12.

Two previously built tent frames will be used at TR's 12 & 13; however one frame has 1/3 of the framing removed this morning at about 0900 so that this shorter frame will be fully supported on the traffic plates in place – it will be too long if the full tent frame is used and require additional support of the extra length. One tent frame is moved to the top of the traffic plates at about 0945 and the other tent frame is moved to the top of the traffic plates at about 1020.

Between about 0900 and 1030, Dr. Herb Townsend and Ashley Takata visit the test rig site. They examine the setup and also perform some tests. Dr. Townsend uses a reference electrode to check the test rod reference potential, checks the grounding of the test rod and test rig (with the assistance of a VGO voltmeter), and checks galvanizing thickness of the test rod. They later work with CT-METS to examine materials in the CT-METS trailer, the bolt storage Conex box, and the warehouse.

After 1030, the laborer works on the tents with assistance from the ironworker for certain portions – he adds sandbags to the feet of the tent to hold the frame down, ties down the tent frame with rope (tie to eyebolts and welded lugs on the traffic plates), and adds the tarps (tops and sides) to the frames. This work continues into the afternoon, with other work happening at different times (NaCl Solution, etc).

At about 1100, the ironworker takes the forklift to the warehouse to get the hydraulic pump for the jacks and some of the pre-mixed NaCl Solution for the test rig wet chambers from the warehouse. Left over NaCl Solution from the 300 gallon tanks from TR's 5-11 were put in clean 55-gallon plastic drums, sealed, and stored in the warehouse, so the work now only involves adding pre-mixed NaCl Solution into the 300 gallon tanks instead of adding NaCl and De-Ionized Water separately into the 300 gallon tanks. One of the three pallets of pre-mixed NaCl Solution planned for use at TR's 12 & 13 is brought from the warehouse this morning. The NaCl Solution from the barrels on this pallet is pumped by the laborer into one 300 gallon tank (designated for TR 13) after first cleaning the pump and hose. This pump and hose

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have only been used in the past for pumping De-Ionized Water and have been stored in a clean environment, but they are cleaned again to ensure that clean material is put into the 300 gallon tanks for use in the test rig wet chambers. This includes running several gallons of the NaCl Solution into a waste barrel to clean the insides of the pump and hose. The pumping of 1 pallet with 3 barrels of pre-mixed NaCl Solution into the 300 gallon tank for TR 13 is complete by 1200.

Starting before lunch, the ironworker gets the hydraulic hoses, fittings, and manifolds for the hydraulics for the two pairs of jacks for each test rig. The hoses, manifolds, etc are attached before lunch and after lunch. After the hoses, manifolds, etc are complete at TR 13 and just laid out without completing at TR 12, ironworker Ricky Damboise verifies that the connections are all ok and also examines the hydraulic pump. Included in the work at the hydraulic pump is checking the hydraulic oil level and tightening some connections the pump that have slight leaks. Today, only the hoses, manifolds, etc at TR 13 are completed with work at TR 12 to continue tomorrow.

Ron Knarr from RK Electric works a couple of hours on CCO 314 today. In the morning, Ron checks the hydraulic pump that will be used for the jacks at the test rigs. In the afternoon, Ron then checks the 7kW generator already at the test rigs and determines a different generator is needed to power the hydraulic pump. At about 1330, the ironworker moves a 40kW generator – MQ Power 40 – ABF ID 002051 to the test rig area to run the hydraulic pump for the jacks. Then the ironworker gets a longer extension cord to reach from the generator to where the hydraulic pump will be operated. In the afternoon, Ron checks the 40kW generator and the hydraulic pump again.

With the hydraulic hoses, manifolds, etc complete at TR 13, the hydraulic pump on site, and the proper generator on site, the first jacking steps (exercising and zeroing) can happen today at TR 13 before tomorrow's scheduled start of the Townsend Test at TR's 12 & 13. This starts at 1420 with the first exercising jacking step. At 650 psi hydraulic pressure per the dial gauge, the primary strain gauges give a force of 112 kips. The hydraulic pressure per the dial gauge is increased to 1,200 psi with the primary strain gauges giving a force of 196 kips. At this first exercising load, VGO checks that the data is reading correctly and sets the automatic email notification system for rod breaks. This hold period is also for a check of the bleed of the hydraulic system - during the approximately 10 minutes at this load, the bleed loss is only a few kips. The hydraulic fluid is then bled to zero approximately 1430. A residual force of about 2 kips is noted per the strain gauges – these single action 400 ton jacks do not bleed all the way down to zero without more time. The automatic email notification system for rod breaks sends a notice, demonstrating that it works as programmed when the rod force drops below the trigger load. Then the second exercising jacking step is performed, with a hydraulic pressure per the dial gauge of 1,200 psi and the primary strain gauges giving a force of 199 kips. The hydraulic pressure is then brought down to zero without a hold period, and a residual force of about 2 kips is noted per the strain gauges. Then the third exercising jacking step is performed, with a hydraulic pressure per the dial gauge of 1,200 psi and the primary strain gauges giving a force of 200 kips. The hydraulic pressure is then brought down to zero without a hold period, and a residual force of about 1 kips is noted per the strain gauges. This exercising of the jacks and strain gauges is complete about 1435, and the ironworker takes the afternoon break while the hydraulic pressure continues to bleed from the jacks. The next step, after the afternoon break, is to perform zeroing procedures for VGO's strain gauges and displacement monitoring. At about 1450, the two TR 13 nuts on the jacking rod (against end plate and against jacking beam) are backed off by the ironworker. Then, VGO performs the zeroing procedure for the strain gauges with the computer. At about 1455, the TR 13 nut against end plate is hand tightened by the ironworker. Then, VGO performs the zeroing procedure for the displacement transducers with the computer. The other TR 13 nut against the jacking beam is also hand tightened so the next jacking step does not waste jack stroke. Then, ABF cleans up tools and equipment for the 1530 end of the shift.

Dr. Herb Townsend, Hayat Tazir, and Carol Choi are at the test rig site to witness VGO performing pH checks between 1500 and 1600. This is a preview of the VGO submittal currently under review detailing the changes to the pH testing protocols, as well as some other checks requested by the DJV. The checks are as follows:

4.00 Buffer Solution:



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0 to 14 pH paper = 4
4.0 to 7.0 pH paper = 4.0

7.00 Buffer Solution:

0 to 14 pH paper = 7

4.0 to 7.0 pH paper = 7.0

6.5 to 10.0 pH paper = 6.5 – reading is off target (also note that there is no 7.0 reading on this paper, with the nearest choices being 6.8 or 7.1)

10.00 Buffer Solution:

0 to 14 pH paper = 10

6.5 to 10.0 pH paper = 10.0

NaCl Solution in Beaker, using sterile pipette out of bag:

0 to 14 pH paper = 5

4.0 to 7.0 pH paper = 5.0 or 5.3 (different evaluations of color by different people)

6.5 to 10.0 pH paper = <6.5

NaCl Solution in Beaker, using sterile pipette out of bag and then rinsed 3 times with NaCl solution:

0 to 14 pH paper = 5

4.0 to 7.0 pH paper = 5.0

6.5 to 10.0 pH paper = <6.5

For the Master Electrode for the reference electrode checks with the Calomel Electrode that will be placed in the wet chambers to check the reference potential, zinc anode wire is being used. The zinc anode wire gave to VGO, which is material that was purchased by the DJV, is placed in a beaker of NaCl Solution at approximately 1600 for a presoak overnight before tomorrow's first scheduled work with the reference electrodes.

CT-METS Elijah Turner and Scott Croff are at TR's 12 & 13 between about 0930 and 0945 to epoxy the stickout end AE sensors. After the epoxy sets, the AE sensors will be checked.

CT-METS Elijah Turner and Scott Croff are at TR's 12 & 13 between about 1400 and 1500 to connect wires to the AE sensors and run the power cord and network cable from the BayView Trailer to the AE computer (in a locked toolbox) at the test rig site.

CT-METS Elijah Turner is at the test rigs between 1600 and 1800 working on the AE System. After installation of the AE sensors on the rod stickouts earlier today, he is performing pencil lead breaks. There is an issue with the stickout AE sensor at TR 12, so a new AE sensor is epoxied to the rod this evening and will be ready for the start of the testing steps tomorrow. There is also an issue with the coupler AE sensor at TR 12. Some tests are performed, and the issue apparently is with the inaccessible sensor inside the wet chamber. This sensor cannot be replaced because of its location inside the wet chamber, and this issue will be addressed in the CT-METS AE reports.

A 7kW generator – Whisperwatt 7000 – ABF ID 002343 is used for parts of the day, mostly by the laborer. A 40kW generator – MQ Power 40 – ABF ID 002051 is brought to the test rig area about 1330 to run the hydraulic pump for the jacks. An oxyacetylene torch is on idle/standby at the test rig work area. A compressor – IR P185 ABF ID 000002 is on idle/standby at the test rig work area most of the day, except when used for a few hours for cleaning the hydraulic fittings for the jacks. An Extendable Forklift and a Hyster 155 forklift are used at the test rig work area at different times of the day. A Kubota Cart is used by the laborer at the test rig work area and a second Kubota Cart is used by ironworker Damboise when he is briefly at the site. Two water pumps are used today to move water from the test rig area per the approved SWPPP.

Note that there is k-rail at this work area. Some of the k-rail is rented and addressed by the rental agreement. Some of the k-rail is ABF's k-rail used on site and paid as rented from ABF on a daily basis.



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To elevate the k-rail, crane mats and timber blocking (12x12's) are in use. The k-rail quantities are as follows:

10' bought k-rail = 20 pieces

10' ABF k-rail = 4 pieces

20' rented k-rail = 16 pieces

20' ABF k-rail = 19 pieces

Note that this includes three 20' ABF k-rail between the CCO 314 work area and FW Spencer's yard, with that k-rail being in place prior to the CCO work and not related to CCO 314.

The agreed extra work with ABF is as follows:

Engineer Kelvin Chen - 8 hr

Ironworker Jared Garrett - 8 hr

Ironworker Ricky Damboise - 1 hr

Operator John Sabatino - 3 hr

Laborer Carlos (Pedro) Garcia - 8 hrs

Radio (4 radios) - 20 hrs

Kubota Cart (2 carts) - 9 hrs

Extendable Forklift - 3 hrs

Hyster 155 Forklift - 4 hrs

185 CFM Compressor - 2 hrs

k-rail: 16 pcs @20' and 4 pcs @10'

Crane Mats (12x12 - 5'x16') - 4 pcs

Crane Mats (12x12 - 5'x7') - 15 pcs

See the attached Extra Work Order - Signed with ABF for CCO 314 work

INSPECTOR OT REMARK:

Field and Office 4 hours: Field 0700 through 1800 and office through 1930. ABF is working in the field from 0700 to 1530, overlapping with that VGO performs some pH tests (trials of planned official tests) with the DJV present between 1500 and 1600, and then CT-METS works on the AE System between 1600 and 1800. Note that I am present in the field with CT-METS (solo engineer) for safety until 1800. Then, I am in the office addressing the VGO submittal detailing the changes to the pH testing protocols – submittal received yesterday, discussed today with some field trials, and official response requested by tomorrow to coincide with the first official implementation of the new details in the field. ABF's shift is 0700 to 1530. My shift is 0700 to 1930 and my OT hours are 1530 to 1930.